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U. S. Department of Agriculture

# Soil Conservation—

## Its Place In National Agricultural Policy

*Nothing, in my opinion, would contribute  
more to the welfare of the States than the  
proper management of lands.*

—George Washington

May 1936

United States Department of Agriculture

Agricultural Adjustment Administration

Washington, D. C.



## Soil Conservation Requires More Than Physical Methods

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In recent months much has been written concerning the depletion of land resources. For the most part, however, attention has been centered on the destructive effects of soil erosion and the physical methods required for their prevention. The present pamphlet is an effort to meet a long-felt need for a clear exposition of the more important economic aspects of the soil-conservation problem and their relation to other elements of national agricultural and industrial policy. If our present knowledge of the physical approaches required for soil conservation is to have widespread effect on farm practices, economic conditions and relations must be favorable.

H. R. TOLLEY,  
*Acting Administrator,*  
*Agricultural Adjustment Administration.*

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# Soil Conservation—Its Place In National Agricultural Policy

Throughout much of American history, natural resources have been so abundant that neither public nor private agencies have felt any responsibility for their conservation. But during the years since the Civil War, as the Nation has approached maturity, a national conservation policy has been gradually taking form.

After more than a century of indifference with respect to all natural resources, public interest in conservation was first aroused by the decline of fisheries and forests. The office of Commissioner of Fish and Fisheries was established in 1871; and 2 years later, a memorial of the American Association for the Advancement of Science started the movement which led ultimately to the establishment of the United States Forest Service.<sup>1</sup> In 1886, there was created in the Department of Agriculture a Division of Economic Ornithology and Mammalogy, which later became the Bureau of Biological Survey. An act of Congress in 1891 empowered the President to proclaim public lands as national forests; and in 1899, the Soil Survey was begun.

These represent the beginnings of conservation in the United States; but the first real driving force back of the movement developed only 30 years ago. An act to protect the Alaskan fisheries was passed in 1906. The Inland Waterways Commission was established in 1907, and the National Conservation Commission in 1908.

Interest in mineral conservation also resulted in the creation in 1907 of the mining technology branch of the United States Geological Survey, which became the Bureau of Mines in 1910. At about the same time some of the unappropriated mineral lands in the public domain were withdrawn from settlement, and a decade later (1920) Congress passed the Mineral Leasing Act and the Federal Water Power Act.

At various intervals from 1904 to 1909 Theodore Roosevelt issued proclamations setting apart for national forests much of the unappropriated forest lands of the public domain. Later, under the

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<sup>1</sup> FEDERICK G. TRYON, "Conservation", *ENCYCLOPAEDIA OF THE SOCIAL SCIENCES*, vol. 4, p. 227.



Weeks law in 1911 and the Clark-McNary law in 1923, the Federal Government was authorized to acquire additional forest areas by purchase. In setting up national forests, forest conservation was justified not only by prospective shortage of timber, but also by the beneficial effects of forestry upon water conservation, stream flow, and flood control.

### Public Now Is Aroused to Save the Soil

The soil is the last of the Nation's important natural resources to become the object of popular conservation interest. With recent dust storms in the West and floods in the East the Nation is becoming increasingly conscious of the harmful effects of soil erosion. The usefulness of large dams constructed for irrigation and the development of electric power is threatened by silting. The choking of stream channels with silt is interfering with navigation, and excessively muddy water prevents the preservation and propagation of game fish and other desirable forms of wildlife. Thus, the advocates of flood control and conservation of power, water, and wildlife find the control of soil erosion necessary for accomplishing their objectives; and soil conservationists find forestry an effective means for saving the soil.

Since the Michigan land economic survey was started in 1922, a very few other States, notably Wisconsin and New York, have begun the development of land programs which deal definitely with forest and wildlife conservation. But not until the last 2 or 3 years has public interest been thoroughly aroused concerning the need for conservation of the land itself. National agencies, such as the Tennessee Valley Authority and others, are now vigorously attacking the land-use problem in all of its ramifications. The Soil Erosion Service was established in the Department of the Interior in 1933, and in 1935 was transferred by executive order to the Department of Agriculture as the Soil Conservation Service. Also in the interest of soil conservation, the Taylor Grazing Act was enacted in 1934 to regulate grazing on a large part of the remaining public domain; and land conservation is one of the reasons for establishment of the Resettlement Administration. The last congressional action was the passage of the Soil Conservation and Domestic Allotment Act in 1936, replacing parts of the Agricultural Adjustment Act.

Present misuse of the Nation's land is in part the outgrowth of its traditional land policy. Until comparatively recent years, that policy has been one of getting the land into private ownership as rapidly as possible, without much regard to the character of the land or the use to which it was best adapted. Under the homestead



laws, areas ill adapted to continuous cropping were homesteaded in the same manner as those less subject to destruction by wind and water. This has resulted in the cultivation of millions of acres in the Great Plains, and elsewhere, which never should have been plowed.

Private property rights in land have been, and still are, virtually unlimited so far as soil conservation is concerned. No limitations are imposed upon individual action, either because of the relative abundance of the resource or because it is assumed that in the matter of land management public and private interests are necessarily identical, which is a false assumption.

The soil is the Nation's most valuable natural resource. Over large areas, loss of irreplaceable topsoil through erosion has been increasing recently at a very great rate, and depletion of replaceable fertility by unwise cropping systems has seriously affected other large areas not damaged appreciably by erosion. Thus, soil conservation means both the control of erosion and the maintenance of fertility. Though erosion is a major cause of fertility losses, it is not the only cause. Nor can the problem be dealt with adequately by individual action alone. Public action is imperative. It is the purpose of this bulletin to describe the national interest in the problem and its place in national agricultural policy.

## I. Extent and Nature of Soil Losses

"Recent surveys of the extent of soil erosion in this country indicate that approximately 50,000,000 acres of once fertile land have been essentially ruined for practical cultivation. Another 50,000,000 acres are in a condition almost as serious. About 100,000,000 acres still in cultivation have been seriously impoverished by the loss of soil; and about 100,000,000 acres more of cultivated land are being depleted of productive soil at an alarming rate."<sup>2</sup>

Altogether, there are approximately a billion acres of land in farms, about one-third of which are normally in harvested crops. Thus, at the end of hardly more than a century of cultivation for most of the country, an area equivalent to the total now in harvested crops, or to 30 percent of all land in farms, is either destroyed, seriously damaged, or threatened. In time, nature might rebuild a part of the land already abandoned because of erosion—if given a chance; but in some cases centuries will be required. As a practical matter, therefore, effort should be directed to reduce the losses, or threatened

<sup>2</sup> H. B. BENNETT, "Soil Conservation", an address before the Forty-first Annual Session, Illinois Farmers' Institute, Belleville, Ill., Feb. 20, 1936, mimeographed by the Soil Conservation Service, United States Department of Agriculture, Washington, D. C.

losses, on an area equivalent to about two-thirds of the Nation's total cropland. In doing so, there is no reason for imagining that the whole country is on the verge of washing away; for at least a third of the cropland and 70 percent of the land in farms is not now threatened by erosion.

The fact remains, however, that the Nation can ill afford to remain indifferent to the possible consequences of erosion. In terms of national existence, a century is a short span of time. Unless effective measures are adopted, we might reasonably expect to lose within the next 200 years all the land now threatened by erosion. And if this should happen, vastly larger areas would then be threatened. While present interest in the problem, as well as recent and prospective action concerning it, are indications that no such dire calamities will occur, the extent to which they are avoided depends directly upon the vigor with which preventive measures are carried out.

### Some Local Conditions More Serious

From the standpoint of local interests, the reasons for preventing soil losses are even more impelling. National averages conceal more serious local conditions. For example, it is estimated that 85 percent of the drainage area of the Dan River in Virginia was once cleared, and that 40 percent of it has been allowed to revert to forest because of erosion.<sup>3</sup> For description of numerous other local situations, the terms "ghost communities" and "ghost farms" are entirely appropriate. Like the "ghost towns" which were abandoned because of depletion of forest resources, these communities and farms are monuments to a disgraceful lack of national foresight. Some of the land suffered the greatest erosion *after* being abandoned because of inferiority for profitable cultivation, but much of it was abandoned *because* of erosion.

Recent spectacular dust storms and floods have been effective in calling public attention to the dangers of erosion, and the traveler is often impressed by the scars in the landscape caused by gullying. But unspectacular sheet erosion is the most insidious and destructive of all forms of erosion, and even less visible are the enormous losses of soil fertility due to overcropping and improper rotations. While this country's exploitative agriculture has caused the loss of great quantities of irreplaceable topsoil, it has at the same time mined other soil of its replaceable fertility. Even though the soil itself is held in place, its fertility must be maintained; otherwise its productivity will

<sup>3</sup> P. F. KEIL, "Two Centuries of Accruing Tragedy Along the Dan River", February 1936 issue of SOIL CONSERVATION, official organ of the Soil Conservation Service, United States Department of Agriculture, p. 3.

decline. Iowa is one of the more level and fertile States. Yet, a recent study by the Iowa State College of Agriculture, in cooperation with the United States Department of Agriculture, shows that under present cultural practices Iowa cannot maintain fertility and control erosion unless corn acreage is reduced by 20 percent. This study is a part of the Department of Agriculture's regional adjustment project, which is Nation-wide in scope. Results from other States are fully as striking as those found in Iowa and they all point in one direction. The Nation cannot maintain its farm plant unless it alters its system of farming radically.

### How Soil Fertility Is Lost

Adjustments in farming systems are necessary not only as a means of reducing erosion losses of both soil and fertility, but also for the purpose of reducing fertility losses due to other causes. Fertility or plant nutrients may be lost or removed from the soil in four distinctly different ways: (1) By erosion, either by surface washing or by wind action, (2) by removal of crops, (3) by leaching, and (4) by volatilization.<sup>4</sup> Generally speaking, erosion and crop removal cause the greatest losses. Because cropping requires cultivation and cultivation increases erosion losses, the two causes are manifestly inter-related, and both are of major importance throughout most of the country. To the extent that the control of erosion maintains fertility, the two problems are one; but, quite apart from the effects of erosion, continuous removal of crops without replacing the chemical elements they extract from the soil has been an important influence impairing soil productivity. The important elements most readily removed by cropping are nitrogen, phosphorus, calcium, and potassium. And humus, the carrier of nitrogen which is vastly important for many other reasons, is another soil constituent often destroyed by over-cropping as well as by erosion.

### Supplies of Phosphorus Are Limited

Of all these constituents, phosphorus is the "crucial" one. Nitrogen can be replaced by the growth of legumes and by other means, and world supplies of lime and potash are so abundant that they can be applied to most soils at reasonable cost for an indefinite future. Though an expensive and often a long-time process, humus can be replaced by such cultural practices as applying barnyard manure and plowing under growing crops. But because of the distinctly limited

<sup>4</sup> CYRIL G. HOPKINS, *SOIL FERTILITY AND PERMANENT AGRICULTURE*, Ginn and Company, 1910, p. 556.



world supply of recoverable phosphorus, the outlook is that this element will become increasingly dear. At present, most of this country's commercial phosphate is mined in Tennessee and Florida, where the available supplies are being rapidly reduced. Eventually, it will be necessary to make use of deposits in some of the Western States on lands in the public domain which were withdrawn from settlement during the administration of Theodore Roosevelt. The amount of phosphate rock in the West is large compared with measured supplies in other parts of the world, though not very great compared with probable reserves in Africa.<sup>5</sup> They represent, however, "aside from coal and iron the most precious mineral heritage of the Nation."<sup>6</sup>

However, "it is not certain that the total supply of phosphate rock in the southern and western States together is sufficient to restore the lands of the United States to their original fertility in phosphorus, to say nothing of providing for the great annual loss through our present methods of handling fertilizers produced on the farms, and disposal of sewage."<sup>7</sup> More than 30 years ago it was reported that "during the past half century in Wisconsin one-third of the original phosphorus of the soil has been lost in the cropped fields. What has been proved for Ohio, Illinois, and Wisconsin, and other States where tests have been made is unquestionably true for the other States in the country which have been settled for some time".<sup>8</sup> It is probable that today the surface soils of the country as a whole have less than half their original phosphorous content.

To control erosion is to conserve this vital soil constituent, because in most virgin soils it is concentrated in the upper 8 inches, having been drawn from the lower strata by plants and deposited in the surface layer by their decay. Soils like those of the Blue Grass Region of Kentucky are underlain by phosphatic limestone, but these are exceptions to the general rule. Where phosphorous supplies in the surface soils have been depleted but are abundant in the lower layers, this element is not a limiting factor in the growth of such deep-rooted plants as alfalfa and sweetclover, once they are established.

In emphasizing the importance of phosphorus, there is no intention of minimizing the importance of other plant nutrients. From the standpoint of an individual farmer, it is now frequently a much less costly and more rapid operation to remedy phosphorous defi-

<sup>5</sup> BUREAU DU XIV CONGRES GEOLOGIQUE INTERNATIONAL ESPAGNE, 1926, "Les Reserves Mondiales en Phosphates", Graficas Reunidas, S. A. 8, Barquillo, 8, Madrid, 1928, vol. 1, p. 7.

<sup>6</sup> CHARLES R. VAN HISE, "THE CONSERVATION OF NATURAL RESOURCES IN THE UNITED STATES", The Macmillan Co., 1918, p. 332.

<sup>7</sup> CHARLES R. VAN HISE, "Preservation of the Phosphates and the Conservation of the Soil", CONSERVATION OF NATURAL RESOURCES, American Academy of Political and Social Science, Philadelphia, 1909, p. 223.

<sup>8</sup> HOPKINS, op. cit., p. 560.

ciencies by applying phosphate fertilizer than to build up humus requirements. Also, on some soils and for a number of crops such as tobacco, there is a greater need for potash than phosphorus. The relative importance of the latter from a national conservation standpoint arises from four basic facts: (1) That for most soils phosphorous deficiency imposes a greater limitation upon crop production than the deficiency of any other mineral element; (2) that in relation to need, world supplies of recoverable phosphorus are more limited than those of other important soil minerals; (3) that a greater proportion of existing phosphorous supplies in the soil is lost by erosion than in the case of any other mineral element; and (4) that it must be applied to many eroded and depleted soils in order to grow legumes which are the best growths for checking further erosion and restoring humus and nitrogen requirements.

In summary, it is clear that the most serious of all soil losses is the loss of the soil itself through the action of water and wind. Where this happens, fertility goes also. And of the various soil constituents, phosphorus is the most important from the standpoint of long-run national interests. The extent of both soil and phosphorous loss is such as to compel the attention of everyone interested in the future productivity of the land.

## II. Economics of Soil Conservation

Why should anyone be interested in the future productivity of the land? What is meant by soil conservation? What action should be taken, if any? Who should take it, and how? These questions go far beyond the facts of physical soil losses. They are social and economic questions involving not only individual purposes and methods, but also national purposes and methods. What does the present generation "owe" future generations? And how far into the future do such obligations extend? There are no exact answers. It is sufficient to say that every step forward in civilization means increased regard for the interests of the future.

### National Purposes Relating to Soil Conservation

The question is often raised as to the extent to which the Nation *should* control erosion. More than a quarter of a century ago Van Hise said, "It is plain that we must not permit soil erosion to take place more rapidly than the soil is manufactured by the processes of nature. To do so will be ultimately to destroy our soils. If nature

manufactures the soil at the rate of 1 inch in a century, then the erosion must not exceed 1 inch in one century.”<sup>9</sup> That the soil would be destroyed ultimately if erosion continues at a greater rate than soil formation is irrefutable logic. But for some soils “ultimately” might be so far in the future as to be of no practical significance.

Furthermore, in the case of certain soils, there are reasons for preventing erosion which are quite unrelated to the rate of soil formation from parent material. Large areas of the surface soils of the country contain a higher percentage of sand and have a more friable structure than the subsurface layers. When erosion removes this sandy or root-pervious surface layer, a lower layer having a higher clay content is exposed. Some of these subsoils might never develop under natural conditions the same desirable physical qualities possessed by the soil removed by erosion. Gullying, moreover, proceeds faster in subsoil than topsoil, and might so alter the topography as to make both cultivation and moisture conservation permanently difficult if not impossible. With these qualifications, Van Hise’s conception of the ultimate national goal can be accepted as valid.

Though the Nation is approaching a stationary population and there is no prospect of an immediate shortage of land for producing food, feed, and fiber, the outlook for the future, especially the more distant future, is by no means clear. Even if all the land should not be needed to produce agricultural products for domestic purposes, there is no positive assurance that it would not be useful in production for an export market. Continued industrialization and population increases in the Orient and in other parts of the world might greatly enlarge the export market for American farm products. Undoubtedly, science and technology will work as great wonders in the future as in the past. Yet, scarcely anyone would say that this is a sound reason for permitting 200 million acres of topsoil to wash and blow away. That would be nothing short of a calamity. Though it were certain that all the topsoil would not be needed to produce farm or forest products for domestic and export purposes, it still would be valuable for conserving water and controlling floods<sup>10</sup>—to say nothing of its possible contribution to more sightly landscapes and more abundant wildlife.

Heavy rains and melting snows will cause rivers to rise and there will be floods regardless of the measures adopted to save the soil, but there can be no doubt that soil conservation would reduce the destructiveness of floods, because frequently it is the last 10 percent of the rise

<sup>9</sup> VAN HISE, *op. cit.*, pp. 215–16.

<sup>10</sup> REPORT OF THE MISSISSIPPI VALLEY COMMITTEE OF THE PUBLIC WORKS ADMINISTRATION, Oct. 1, 1934.



in flood waters that does most damage to life and property. Land management which would save the soil would also increase water absorption, and consequently reduce both the rate of run-off and the level to which streams now rise at flood stage. An investigation in Oklahoma shows that over a 5-year period the run-off from land cultivated continuously in cotton was 11 times as great as that from land in Bermuda grass.<sup>11</sup>

Adequate flood control, however, requires more than the best conceivable soil cover. Dams must be built to check the rate of run-off, both from farms and from major stream channels. The work of the T. V. A. in this respect is especially significant. Recent flood waters at Chattanooga were at least 3 feet lower than they would have been if the waters of the Powell and Clinch Rivers had not been held back by Norris Dam.<sup>12</sup> But the usefulness of this and other dams will be impaired unless the reservoirs are kept comparatively free of silt. Here, then, is the most important relation of soil conservation to flood control. The soil must be kept in place if the reservoirs are to be most effective.

The Oklahoma study shows that land cultivated continuously in cotton lost 670 times as much soil as that covered with Bermuda sod.<sup>13</sup> Observations in Missouri covering a 14-year period show that even land cultivated in a corn-wheat-clover rotation lost 9 times as much soil as that kept in bluegrass.<sup>14</sup> Tests of recent Potomac flood waters revealed that silt in the water represented one-half of 1 percent by volume. Though the usual proportion for flood waters of most streams is less than 1 percent, the amount in some cases is as high as 15 percent. Hence, reduction of soil losses lessens the volume of flood waters by reducing both the amount of run-off and the silt load; and might often mean the difference between destructive and relatively harmless floods. Certainly, the soil will serve the Nation better where it is than by muddying creeks and rivers or choking channels and costly reservoirs.<sup>15</sup>

<sup>11</sup> OUTLINE OF INVESTIGATIONS AND SUMMARY OF RESULTS: 1930-35, RED PLAINS SOIL EROSION EXPERIMENT STATION, GUTHRIE, OKLA., Soil Conservation Service, United States Department of Agriculture, 1936, p. 3.

<sup>12</sup> ENGINEERING NEWS-RECORD, Apr. 2, 1936, p. 496.

<sup>13</sup> See footnote 11.

<sup>14</sup> M. F. MILLER and H. H. KRUSEKOPF, THE INFLUENCE OF SYSTEMS OF CROPPING AND METHODS OF CULTURE ON SURFACE RUN-OFF AND SOIL EROSION, Missouri Agricultural Experiment Station, Research Bulletin No. 177, Columbia, Mo., 1932, p. 17.

<sup>15</sup> J. C. STEVENS, "The Silt Problem", PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS, October 1934, pp. 1181-82 and 1207. Referring to such reservoirs as Boulder Dam, the author says, "Ultimately, however, within some definite number of generations, the fact must be faced that all these reservoirs will have become useless for storage purposes. The dependent peoples must then be reduced to those that can subsist on the areas which the unconserved flow of the river will irrigate."

"Except on certain small reservoirs for municipal or industrial purposes, it is generally impracticable to remove any substantial quantity of silt from reservoirs after it has been deposited. The most practicable remedy lies in preventing permanent deposits."



## Crop Adjustments Necessary to Maintain Fertility

Nor are these the only purposes that may be served by a national land-use program which effectively controls erosion. Incidentally, such a program will contribute in an important measure toward solving the immediate problem of balancing agricultural production with effective demand, and thereby tend to maintain farm income at reasonable levels. It was discovered as a result of the regional adjustment project of the Department of Agriculture that in order to check soil erosion and depletion, farmers of the Corn Belt would have to reduce their acreage of corn and oats and increase their acreage of soil-building crops such as legumes, hay, and pasture.<sup>16</sup> Southern farmers would have to decrease their cotton acreage and increase their acreage in pasture and feed crops other than corn. In the wheat-producing sections of the Great Plains and the Pacific Northwest, wheat acreage would have to be reduced, and low-yielding land would have to be taken out of production. Results of the project indicate that in the semiarid range region, the number of cattle and sheep on the range should be stabilized at or near the present low level in order to restore the grass cover and check wind erosion.

## Can the Nation Afford to Save the Soil?

To pass the soil on to succeeding generations as nearly unimpaired as possible is generally recognized as a worthy national purpose. This requires the control of erosion and the maintenance of fertility. Can the Nation *afford* to carry out this purpose? The contention has been made that it cannot afford *not* to do so. "It is a first principle of political science that the State has immortal life. States have perished in the past, but political and economic science cannot take into account the possibility that our own national life will ever cease to exist. All wise plans must be based upon the hypothesis of continued national existence."<sup>17</sup> Conservation means the greatest good for the greatest number for the longest possible period of time, with due regard for the interests of each succeeding generation.

Whether the Nation can afford to save the soil is a question that cannot be answered solely in dollars and cents, but a few observations in these terms are pertinent. The half billion dollars expected to be appropriated annually under the Soil Conservation and Do-

<sup>16</sup> ORIS V. WELLS, "The Regional Adjustment Project: A Summary and Some Suggestions for Further Work", an address before the annual convention of the Association of Land-Grant Colleges and Universities, Nov. 20, 1935, mimeographed by the Agricultural Adjustment Administration, United States Department of Agriculture.

<sup>17</sup> ELY, et al., *THE FOUNDATIONS OF NATIONAL PROSPERITY*, The Macmillan Co., 1923, pp. 36-37.

mestic Allotment Act of 1936 is the equivalent of one-half to 1 percent of the national income for a single year, which ranges from 50 billions in depression to 100 billions in prosperity. It is equivalent, moreover, to 5 percent of the value of the 200 million acres of eroding land, assuming that such land has an average value of \$50 per acre. And it is at least doubtful that the value is this great.

The real questions, then, seem to relate not to purpose but to method, and appropriate methods can evolve only from a clear understanding of the reasons for present failure to conserve the soil. Fundamentally, there are three reasons: (1) Individuals do not always know their own interests, (2) their interests in soil conservation and those of the Nation frequently are not identical, and (3) individuals do not always possess the personal qualities and economic power needed for pursuing their interests.

### The Role of Education and Research

Unquestionably, one important reason for abuse and misuse of the land is that many operators are either unaware of its possible consequences for themselves as individuals, or lack the technical knowledge required for the maintenance of soil productivity. Technical research and educational work can be expected eventually to minimize the importance of this cause.

Due in large measure to the pioneering efforts of H. H. Bennett and others of the Division of Soil Survey, the Soil Conservation Service was established in 1935 to: (1) Conduct "investigations into the character and extent of soil and water losses and for the development of measures and practices of soil and water conservation to provide for flood control and the conservation of national land resources", (2) engage in "conservation operations, involving the carrying out of proper land use and soil and water conservation practices on project demonstration areas, and the application of such practices on extensive areas of publicly owned lands and in other designated work areas", and (3) foster "the general application of soil conservation practices through consultation services and educational and informational means."<sup>18</sup>

This agency, therefore, is attacking the problem partly through the medium of education and research. Demonstration projects widely distributed throughout the United States involve 6,500,000 acres of privately owned land. The labor of 450 C. C. C. camps is being employed in other demonstrations covering 7,000,000 more acres, most of which is privately owned. In addition to the demon-

<sup>18</sup> From officials of the Soil Conservation Service.

stration projects on private land, erosion control activities are being carried out on three large areas of federally owned land representing a total of 39,000,000 acres. Also, 12 regional erosion experiment stations have been established. Such activities as the Soil Conservation Service is now engaged in represent the real beginning of a vast undertaking. Meanwhile, agricultural colleges and experiment stations continue research on all phases of soil management, and the extension services continue to take the results to farmers. The work of the soil scientist is both scientific and impressive.

Yet, over large areas, it is easy to overestimate the relative importance of education and research as a means for saving the soil. It is for this reason that the Soil Conservation Service includes in its program the provision of technical services as well as instruction. The cost of these services is defrayed by public funds. And the fact that in the soil erosion demonstration projects the Federal Government frequently furnishes a part of the necessary labor, seed, lime, fertilizer, and fencing materials has a significance much deeper than that of an educational technique. It suggests that the usefulness of education alone is distinctly limited. The two most obvious limitations are that the interests of many farmers in soil conservation are not the same as those of the Nation, and that even those individuals whose interests are adequate frequently are unable to follow sound practices because of the collective economic pressures under which they actually operate.

### National and Individual Purposes May Be in Conflict

Nothing is more apparent in economic life than that every individual's interests are of two kinds—his interests as an individual, and his interests as a member of a group. These two interests may be, and often are, in conflict. National interest, public purpose, or the interest of "society" rarely (if ever) means the interest of every individual, and never means an interest in which every individual is equally interested—either absolutely or in relation to his interests as an individual. National purpose is the purpose of the majority. Through control of the army and the police force, the majority can agree to collect taxes wherever the taxes can be found, in order to accomplish its purpose. Individuals cannot do this. Unlike the Nation, many farmers cannot afford to save the soil. Others have little or no economic incentive to do so, however much their intellectual and emotional interests might persuade them.

Where farmers have both the opportunity and expectation of operating their farms for a period of 10 to 20 years, science and experience agree that generally those practices which will save the



soil of land that should be in cultivation are also the most profitable for the individual in the long run. Many of the best farmers have already adopted such practices. And the fact that they regard their farms as permanent homes as well as businesses is an additional powerful incentive for conservation. Immediate interests, moreover, frequently require practices more conducive to soil conservation than those in use. But even if all farmers thoroughly understood their interests and had perfect knowledge of the physical techniques required for soil conservation, large areas of land would still be subjected to erosion and depletion unless present economic relations are changed. These relations are institutional in character. They are the forces of collective action, governmental and nongovernmental; not of individual action.

Of what use is it to educate a tenant or a sharecropper, with a 1-year lease and an inadequate income, on the physical technique of soil conservation? What is soil "waste" to the Nation is most frequently not waste at all to him. And of what use is it to teach a landlord the same subject if his primary interest in the land is that of a speculator—to sell it as quickly as possible to someone else, and in the meantime to take all he can from the land without reducing the selling price unduly?

### Land Tenure, Land Values, and the American System

These questions refer to basic forces in what has been called the "American system", which must be taken into account in any conservation program if it is to be effective. Until about the beginning of the present century land resources were abundant; and in the interest of settlement, it was the national policy to dispose of the public domain as quickly as possible. Grants were made right and left to all sorts of groups and individuals. Many persons in the United States considered land as something to be acquired and exploited or resold at a profit. "During the 1850's and 1860's there passed into the hands of western railroad promoters and builders a total of 158,293,000 acres, an area almost equaling that of the New England States, New York, and Pennsylvania combined."<sup>19</sup>

This quick transfer of the land from public to private ownership was accompanied by settlement and rapid rise in land values. Between 1850 and 1890 the average value per acre of farm real estate practically doubled; and from 1900 to 1920 it almost doubled twice. With the exception of the census at the close of the nineties, following a period of extremely low farm prices, no census prior to that of

<sup>19</sup> B. H. HIBBARD, "Land Grants", *ENCYCLOPAEDIA OF THE SOCIAL SCIENCES*, vol. 9, p. 35.

1925 failed to show an increase in farm real-estate values. The figures for every census year since 1850 are as follows:

Year:	Dollars per acre	Year:	Dollars per acre
1850-----	11. 14	1910-----	39. 60
1860-----	16. 32	1920-----	69. 38
1870-----	18. 26	1925-----	53. 52
1880-----	19. 02	1930-----	48. 52
1890-----	21. 31	1935 preliminary-----	31. 16
1900-----	18. 91		

The almost continuous increase in land values prior to 1920 gave rise to the often-repeated witticism that "farming is the only business in which a man can lose money all his life and die rich." It made speculators out of most landowners—farmers as well as others. And speculators are not soil conservers. Speculators are buyers and sellers who are not much concerned with a future generation's interest in any *particular* parcel of land.

### Absentee Ownership and Speculation

Absentee ownership and tenancy are inextricably associated with speculation. From 1880 to 1930 the proportion of farms operated by tenants increased from 25.6 percent to 42.4 percent, and every intervening census showed an increase over the preceding one. In 1935, however, 42.1 percent of the farms were operated by tenants. This is the first census in history reporting a decrease in percentage of tenants. But the entire decrease was due to changes which occurred in the South. Outside the South tenancy continued to increase, and the greatest increases occurred in the North Central States where the percentage of tenancy was already high. To what extent was this due to the fact that the depression was forcing owners to give up titles to their farms and become tenants? What is more significant from the standpoint of soil conservation is the fact that from 1930 to 1935 the value per acre of tenant-operated farms showed a greater proportionate decline than that of owner-operated farms. Does not this fact reflect a lesser interest on the part of tenants in the long-time consequences of their cropping and cultural practices?

American tenancy is short-lease tenancy. Short leases facilitate speculation; the speculator usually does not want any agreement with tenants to interfere for too long a period with his buying and selling activities. Many tenants, too, prefer short leases, partly because of nothing more tangible than the urge to move. And since landlords do not customarily compensate tenants for improvements in soil fertility, there is little reason why the tenant should conserve the soil. It is generally to his interest to get all out of it that he can before he moves to the next farm, and to exploit each farm he rents as completely as possible.

But it cannot be said that tenancy, as such, is the limiting factor in soil conservation. It is the form of tenancy that is the real issue, and neither the tenant nor the landlord is individually responsible for that form. It is an economic and social institution, which is an outgrowth of conditions partly determined by past public policy.

Land ownership in an earlier day meant social prestige, as it still does in England where more than a quarter of the farms are operated by tenants. Because of pride in ownership, many of the estates are subsidized by the nonagricultural income of the landlord. The modern English landlord parts with his estate more frequently than did his feudal ancestor, the lord of the manor, but he holds it distinctly longer than the average American landlord. Similarly, the modern English tenant moves more frequently than the serfs and vassals of feudal times, but his migrations are as nothing compared with those of the American sharecropper. English tenants have a direct economic interest in maintaining and improving the estates they operate. They are either paid for their services or have such long tenure that they are able to reap the rewards of their efforts.

In the ante-bellum days of the South there existed this same English tradition of social prestige associated with land ownership, though unlike the English estates, those of the South were maintained by slave labor. While the culture of Mount Vernon and Monticello was not inimical to soil conservation, only a comparatively small fraction of American farm land, even of that in the South, was ever owned by "landed gentry". When that ownership passed from the aristocrats to the lower and middle classes, much of the land, along with other areas throughout the country, was caught in the surge of American competition and speculation—and washed away. This is not to say that under the pre-Civil War plantation system the soil was treated any better than, or even as well as, some small owner-operators have treated it since. It means only that because many of the plantations were owned by people who had a long-time interest in them, they were probably less badly abused than under the more recent sharecropper system.

### Small Owner-Operators May or May Not Have a Long-Time Interest in Their Farms

It should not be understood that a long-time interest in land ownership and land conservation is confined to a "landed aristocracy." European agriculture, generally, has an entirely different historical background from that of the United States. A very large proportion of the farms in Europe are rarely ever sold. They pass down from generation to generation within the same family; and



tenancy is relatively small in some countries such as Germany, where it hardly exceeds 10 percent. The individual owner-operator is linked to the past by a particular parcel of land and expects it to remain "in the family" for the indefinite future.

But the American system has been a complex of forces unrestrained by status or primogeniture. Tenants and absentee landlords are not the only farmers without long-time interests in particular parcels of land. Though the number is perhaps much smaller today than formerly, there are probably owner-operators in Iowa still nursing the ambition to live near former neighbors again by migrating to Los Angeles and Hollywood. Others are educating their children for nonfarm occupations and hoping to sell the farm at the first favorable opportunity. Still others are seeking to "make a deal" for a better farm. And so it goes—most landlords and tenants, and a significant proportion of owner-operators, all looking elsewhere from the land they now operate. Altogether, it is probable that at least half the farms are thus affected. Truly, it was inevitable that the "old homestead" should have rough usage under this system. Affection for or sustained interest in *particular sites* was bound to suffer a loss.

### Free versus Fair Competition

These are not all the forces in the system working against conservation. While agriculture has remained exposed to the vicissitude of free competition within its ranks, business has steadily evolved controls in its own interest under the name of "fair" competition. Until 1920, steadily rising land values (and homestead land as long as it lasted) concealed the fact that ultimately agriculture would have to develop its own controls in self defense, and that many of the practices appropriate for a pioneer economy are positive evils when retained after there is no more wilderness to conquer.

It was not by accident that the conservation movement began 30 years ago. The end of the "unlimited" public domain was in sight; and individuals seeking their own interests in the name of rugged individualism had taken such flagrant advantage of everyone else as to invoke widespread wrath. To keep greed and special privilege from getting an increasingly unfair share of land, mineral, forest, and other resources was a part of Theodore Roosevelt's "trust busting" efforts. This redistribution-of-wealth motive was the real spark that arrayed public support behind the efforts of the conservationists. Concern for the interests of the more remote as well as the immediate future and a desire to prevent waste were contributing influences, but they were insignificant compared with the effect of indignation



aroused by the steals and frauds perpetrated by and against people of that day.

During this entire period, to maintain the "status quo" has been to maintain a system of resource exploitation. Thus it happens that among those known as "liberals" have been the ardent conservers, and among those known as "conservatives" have been the ruthless wasters.

Effective interest in soil conservation first developed after the longest decline of farm real-estate values in history. Every year from 1920 to 1933 showed a decrease in values from the preceding year; and throughout much of the period, agriculture was virtually in a state of economic collapse. There had been hard times before, but never had there been the necessity of reducing such a heavy debt and tax structure as existed during this period. What was more important, wide disparities between farm and nonfarm prices were long sustained. Fundamentally, these disparities meant that there was a lack of balance between agricultural and nonagricultural production. It was apparent that the difficulties were due in large measure to the existence of free competition in agriculture alongside regulated competition in business. Less than 18 months after the collapse of farm prices in 1920, Professor Ely warned that "in our own country there must be a proper proportion between agricultural production and the production of nonagricultural goods and services. This is fundamental in the establishment of a national land policy."<sup>20</sup> Yet, for more than a decade, nothing effective was done to bring about that "proper proportion".

Free competition in agriculture continued. Fair competition and reasonable farm prices did not prevail because no action was taken to coordinate the farmer's individual and collective interests. These were in conflict. His individual interest was to produce as large a *proportion* of the total supply of farm produce as possible, while his collective interest was in not producing so much that the price was unduly depressed.

Failure to substitute fair competition for free competition was the reason that throughout the period from 1920 to 1933, even those farmers who have, and recognized that they have, a long-time economic interest in conserving the soil were in many cases too hard pressed to do so. Low prices for what they sold, high prices for what they bought, heavy mortgages, high interest rates, and heavy taxation compelled many of them to act contrary to their own long-run interests in order to retain title to their farms. They depleted their soil and other capital to meet necessary fixed charges,

<sup>20</sup> RICHARD T. ELY, "A National Policy for Land Utilization", REPORT OF THE NATIONAL AGRICULTURAL CONFERENCE, printed in H. Doc. 195, 67th Cong., 2d Sess., Washington, D. C., 1922, p. 117.

and hoped that at some future time they might be able to replace this capital. But despite such efforts thousands failed to meet the charges and were subjected to foreclosure proceedings.

## Soil Conservation Requires Economic and Social Changes

Thus, it is clear that the soil conservation problem is in large measure one of developing an economic policy in line with physical necessities. As such, the method appropriate for dealing with it must include economic and social techniques which provide adequate inducements for or remove existing handicaps to the adoption of proper physical techniques. If the broad objective of soil conservation is fundamentally sound, if the economic interest of a large proportion of farmers in conserving the soil is too limited for national purposes, and if many of those who have sufficient interest are without adequate income, what must be the principal characteristics of desirable policy?

The economic, social, and political fact of paramount importance in the formation of any national soil conservation program is that the Nation's farm land is operated as more than 6 million separate enterprises by people who represent the most individualistic class of American society. There are probably half as many separate owners, who now have, and very likely will continue to have, authority to do virtually as they please with land they own. A national program, therefore, must come to terms with millions of owners and operators, or the overwhelming majority of them, and it cannot be put into effect by Federal compulsion. It seems improbable, moreover, that local compulsion will be employed except in connection with attempts to control the most spectacular forms of erosion. Texas recently has given power to county judges and county commissioners of nine Panhandle counties to control wind erosion on farms of individuals who refuse to do so, and to charge the costs to the owners.<sup>21</sup> The law was aimed mainly at nonresidents who own 30 percent of the farms, and is one of the first instances of its kind on record. As yet, there is no instance of local compulsion to control other destructive, though less spectacular, forms of erosion.

A second highly important practical aspect of the problem is the extreme variation in both the technical and economic adjustments appropriate for regions, communities, and individual farms. No State or Federal agency has all the knowledge and skill required for such adjustments, if they are to be made with any consideration for the people now living on the land. The task is one in which individuals, communities, the States and the Federal Government can all participate. In fact, if local, State, or national programs are to be

<sup>21</sup> House Bill No. 978 (Texas), passed May 21, 1935.

successful, there must be a maximum of farmer participation in both their formulation and administration. The soil scientist and other experts working alone cannot work out the best program; and even if they could, farmer approval and assistance would be required for its administration.

In the field of land use, as in other matters, experience has condemned the classical doctrine that private initiative and self-interest can be depended upon to protect adequately the public need. But the most hopeful procedure for harmonizing private and public interests is the employment of collective persuasions and inducements democratically determined.

### County Agricultural Planning

During the past year a national project for county agricultural adjustment planning was inaugurated in cooperation with the Extension Service. This project was designed to meet the need for greater participation by farmers in the formulation and administration of adjustment programs. In October of 1935, a start was made toward setting up in each agricultural county of the United States an adjustment planning committee of 10 to 20 members representing the various agricultural interests of the county. At the present time, such committees exist or are in the process of being established in most of the agricultural counties of the country. Each committee, with the assistance of community committees and subcommittees, is undertaking to build a long-time adjustment program for its county. As a first task, it is seeking to determine changes in local cropping systems necessary to maintain fertility and control erosion, and the possible effects of such changes on production. This requires a careful appraisal of the problem in each local community.

### III. Types of Possible Remedial Action

For some farms, the limiting factor in soil conservation is the lack of technical knowledge on the part of operators as to either the damage being done by present practices or the change in practices necessary for soil protection. As previously noted, however, it is exceedingly doubtful that more than half of all farms are in the hands of people whose interest in them extends into the future sufficiently to encourage the adoption of *adequate* soil-conservation measures. Adding to this number all those farms in which the owners do have such an interest but are financially unable to do anything about it, it is reasonably certain that at least two-thirds of all farms are held by people who cannot be expected to do what needs to be



done if they are merely informed as to the seriousness of soil losses and the techniques for preventing erosion. Thus, besides an expansion and development of the research, educational, and cooperative activities of the Soil Conservation Service of the Department of Agriculture, three separate though related types of remedial action are required, as follows: (1) Direct subsidy to landowners and operators, (2) stabilization of farm prices and income, and (3) shifts in population and changes in size of farms.

### Direct Subsidy to Landowners and Operators

Production allotments and benefit payments under the national agricultural adjustment programs of the last 2 years have already had important effects on agricultural land use. Both in 1934 and in 1935, more than 10 million acres of crop land throughout the country were shifted from cultivated crops to soil-conserving legumes and grasses, under adjustment contracts with farmers.

So far as use of submarginal land in the so-called problem areas is concerned, there are only three alternatives for national policy: (1) To permit individuals to continue exploiting soils that never should have been plowed, (2) to devote the land to its best permanent use (such as forests, parks, game preserves, grazing districts, etc.), and remove the surplus population, and (3) to retire the land from cultivation and subsidize the surplus population "in place". If the soil is to be conserved, only the last two of these alternatives exist.

If all the land that never should have been plowed could be permanently retired from cultivation and covered with grass and trees, much of what is here described as the soil conservation problem would be solved, and it is probable that a substantial proportion of the land in this class is in the problem areas. Yet, there would still remain the important, though less acute, problem of conserving soil which is agricultural soil and which might well be in cultivation at least a part of the time. This problem does not involve the migration of surplus population; but it does require that positive incentives for soil conservation be provided. The primary reason is, as previously pointed out, that a distinct majority of farmers either have no long-time interest in the land they operate or are financially unable to pursue that interest. And besides this reason, there is the additional reason that because of past neglect erosion on some farms has already reached the stage where the cost of controlling it exceeds the value of the land.<sup>22</sup> But since erosion, once it gets started, tends to spread

<sup>22</sup> W. C. LOWDERMILK, "Erosion in the Orient as Related to Soil Conservation in America", JOURNAL OF THE AMERICAN SOCIETY OF AGRONOMY, April 1929, p. 413.

at an increasingly rapid rate, the community must control it on such farms in order to protect other farms not yet affected. If the soil is to be conserved, the Nation has no choice but to subsidize soil conservation on individual farms until fundamental economic and social arrangements are so revised as to provide the necessary inducements. The three forms of subsidy now being given are benefit payments of the Agricultural Adjustment Administration, supplies and technical services of the Soil Conservation Service, and phosphates of the Tennessee Valley Authority.

### Stabilization of Farm Prices and Income

Probably no changes in economic conditions would contribute more toward fostering a wider individual interest in soil conservation than those which would tend to reduce land speculation and land "booms". The Nation is approaching a stationary population, which means that the long-time outlook is for comparatively little increase in land values due to population growth. This removes one influence which has tended in the past to encourage speculative interest.

Stable land values are associated with stable ownership and a minimum of speculation, and all of these are but reflections of relative stability in farm prices and incomes. Thus, it is not only the level of prices and income that is important from the standpoint of soil conservation but it is also the stability of that level. There is evidence that excessively high prices serve nearly as much as low prices to induce soil exploitation. The relation between soil conservation and farm income is most apparent in such problem areas as the Great Plains. High prices for wheat caused destruction of sod necessary for soil protection; and though subsequent low prices caused abandonment of many of these lands, the wind was able to get in its work before new sod could be grown.

It should not be supposed, however, that stable incomes at any level would serve the cause of conservation equally well. American farmers will not live under conditions of stabilized poverty and save the soil at the same time. As long as farmers want to drive automobiles and live like other Americans, they will heavily discount the future if necessary in order to do so. The more they discount the future, the less they will save the soil for future generations; and the lower their income, the more they will discount the future.

Hence, the problem is one of balancing present and future needs. As previously noted, an individual's interest in a *particular parcel* of land may be for only a year, and rarely extends beyond a generation or so; whereas the Nation's interest is reckoned in centuries. The heavier rate at which the individual discounts the future is the simple economic principle underlying the whole problem of

conservation. For practical purposes, however, national interests would be reasonably well served if the individual's interest extended only to the next generation. But any farmer who is unable to meet his present standard of living, whatever that standard may be, will certainly devote little effort to saving the soil where it means any sacrifice of present income. If the Nation would save the soil on all farms, it must assume responsibility not only for insuring such individuals against loss of present income, but also for maintaining a reasonable level of income.

### Shifts in Population and Changes in Size of Farms

A reasonable level of farm income cannot be maintained indefinitely in submarginal areas, except by unreasonable subsidies. In many instances, the farms are too small to make possible, without subsidy, the type of agriculture required to conserve the soil. Much of the land should be permanently retired from cultivation because of either its susceptibility to erosion or its poor quality. To change the size of farms so as to make possible a permanent and profitable agriculture and to retire from cultivation lands better adapted to grazing and forest use, large-scale migration must occur ultimately. Migration will either be forced by soil wastage, as has already occurred in many areas, or it will be planned for and carried out at public expense before the land is destroyed. Even in 1930, large subsidies would have been necessary to carry out immediately a sound land-use program in the problem areas, unless at least 2 million people on farms in these areas could have moved promptly either to cities or to better farm lands. This number includes a half million in the Southern Appalachians, a million in the Old Cotton Belt, and about a half million in the Great Plains and in such smaller problem areas as the Ozark Plateaus.<sup>23</sup>

### Depression Added to Farm Population Surplus in Problem Areas

Excepting the Great Plains area, a disproportionate share of the 3 million added to the farm population during the depression has been added to the populations of problem areas. A recent analysis of school census data of a representative group of States shows that

<sup>23</sup> BUSHROD W. ALLIN, "Migration Required for Best Land Use", a paper presented at the twenty-sixth annual meeting of the American Farm Economic Association, New York City, Dec. 27, 1935.

For the details supporting estimates included here, see the forthcoming report of the STUDY OF POPULATION REDISTRIBUTION, Migration and Economic Opportunity, to be published shortly by the University of Pennsylvania Press, Philadelphia, Pa.



nearly three-fourths of the total increase from 1930 to 1933 in school population of agricultural counties occurred in counties classified as the poorest half in each State, and 40 percent took place in those defined as the poorest quarter.<sup>24</sup> Thus, the greatest increases occurred where there was already an excessive pressure of population against an inadequate resource. Relief loads of many counties in the problem areas are among the largest in the country. Of the 29 counties in the United States that had more than 36 percent of their population on relief in 1933-34, 23 are in poor-land areas. Much of the land in the Southern Appalachians and the Old Cotton Belt has a slope so steep that it cannot be plowed without serious soil wastage, and an increasing farm population cannot maintain even the present low levels of living without cultivating these slopes. A progressive lowering of living standards is inevitable unless the migration of the depression period is reversed.

The increases were greater in the poor-land areas because birth rates are higher and land values are lower than in the better farming regions. The back-to-the-land migration, moreover, was to the same places from which large numbers had migrated to cities during the prosperous twenties. However much the Nation might experiment with "repeatable demonstrations" of desirable land-use projects in these regions, the chronic difficulties causing misuse of the land must be eliminated if the problem is to be dealt with adequately. This means that any program designed to prevent the use of poor land as a shock absorber for industrial unemployment will have to provide opportunities as good or better than that of attempting to eke out an existence by cultivating eroding hillsides. As previously noted, however, this would constitute only a partial solution of the land-use problems in the "problem areas", for the present surplus population in these areas consists of not only the increase that occurred since 1930 but also a significant portion of the 1930 population.

The problem areas cannot maintain their present populations on an adequate standard of living. Devoting lands in these areas to their best permanent uses would sustain fewer people on a higher level of living, and would release those not needed on the land for better opportunities elsewhere. An acute problem of the present time is how to provide this segment of the Nation's man-power with an opportunity to produce a decent living without exploiting soil resources. Proper land use for the problem areas might mean a total farm population in the United States of 4 million fewer people, or about seven-eighths of the present number. The entire 4 million

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<sup>24</sup> GOODRICH, ALLIN, and HAYES, *STUDY OF POPULATION REDISTRIBUTION, Migration and Planes of Living 1920-1934*, University of Pennsylvania Press, Philadelphia, Pa., p. 76.



could leave agriculture and the total volume of farm products could be increased at the same time. Prior to the depression, when the farm population was 3 million less than at present, agricultural production was greater.

### Industrial Recovery May Relieve Population Pressure on Farms in Problem Areas

The productive capacity of this Nation is not so limited as to deny it the privilege of providing decent maintenance for the victims of its business cycles. Apparently, present Federal relief policy is based on this assumption. Had the relief policy been niggardly, the back-to-the-land movement undoubtedly would have been greater, farmers would have borne a larger share of the burden of unemployment relief, and more soils which should never be plowed would have been exploited and subjected to the effects of erosion.

With industrial recovery, much of the surplus population in problem areas can be expected to migrate to urban centers. The improvement in general economic conditions that has already occurred during the last 2 years has reduced the rate of population increase in these areas below that of the first years of the depression. But even if industrial recovery should draw the surplus population from the farms to the cities, mistakes in land use would occur again in connection with the next industrial depression unless positive public action were taken to prevent their recurrence. Such action would include not only a system of social security, but also land-use zoning and public purchase. At best, however, these are long-time procedures. In the meantime, emergency measures must be adopted if the rapid rate of soil destruction in some of the problem areas is to be arrested.

## IV. The Place of Soil Conservation in National Agricultural Policy

The foregoing analysis of the broader economic implications of soil conservation leads logically to a consideration of its place in national agricultural policy. The goal of such a policy is to bring about that use of land which will provide consumers with continuous and abundant supplies of farm produce at reasonable prices, yield a reasonable income to farmers, and at the same time maintain soil fertility and control erosion. The goal is not merely to conserve the soil. Nor is the purpose to conserve the soil only to protect the in-

terests of the more remote future. Conservation thus interpreted has never had any popular appeal, and probably never will have. To be successful, an adequate soil-conservation program must appeal to the farmer's immediate as well as his long-time interests. By paying the cost of technical services which farmers cannot afford, the Soil Conservation Service appeals to both interests.

Conservation provisions of the present national agricultural program are linked inseparably with other broad objectives of immediate interest to the farmer. Among the declared purposes of the Soil Conservation and Domestic Allotment Act are: (1) To conserve soil resources, (2) to protect rivers and harbors against the results of soil erosion in aid of maintaining navigability and in aid of flood control, and (3) to reestablish and maintain the pre-war ratio between the per capita purchasing power of farm and nonfarm income. In seeking these objectives, it is also declared that due regard shall be given to the maintenance of a continuous and stable supply of agricultural commodities adequate to meet consumer demand at prices fair to both producers and consumers.<sup>25</sup> "Aiming at justice for agriculture and self-interest for the Nation, the plan seeks to salvage and conserve the greatest values in human life and resources with which this Nation is endowed."<sup>26</sup>

### Efficient Use of Soil Resources

The program has been condemned by some as a "subterfuge", as an attempt to nullify the Supreme Court's decision in the *Hoosac Mills* case by changing words rather than purposes, as an attempt only to continue the emergency crop control features of the Agricultural Adjustment Act. Nothing could be farther from the truth. Long before the court's decision, farmers and their leaders were aware of the need for revising the emergency program to meet the requirements of a sound long-time program. And on October 25, 1935, more than 2 months before the decision, the President said concerning the Agricultural Adjustment Act that

it never was the idea of the men who framed the act, of those in Congress who revised it, nor of Henry Wallace nor Chester Davis that the Agricultural Adjustment Administration should be either a mere emergency operation or a static agency. It was their intention—as it is mine—to pass from the purely emergency phases necessitated by a grave national crisis to a long-time, more permanent plan for American agriculture.

<sup>25</sup> Public, No. 461, 74th Cong. (S. 3780), sec. 7 (a).

<sup>26</sup> Statement by President Franklin D. Roosevelt issued at the time of signing the Soil Conservation and Domestic Allotment Act. Mimeographed Mar. 2, 1936, by the Agricultural Adjustment Administration, Washington, D. C.

He then went on to say:

Such a long-time program is developing naturally out of the present adjustment efforts. As I see it, this program has two principal objectives: First, to carry out the declared policy of Congress to maintain and increase the gains thus far made, thereby avoiding the danger of a slump back into the conditions brought about by our national neglect of agriculture. Second, to broaden present adjustment operations so as to give farmers increasing incentives for conservation and efficient use of the Nation's soil resources.

The long-time and more permanent adjustment program will provide positive incentives for soil conservation. The benefit payments can be made on a basis that will encourage individual farmers to adopt sound farm management, crop rotation, and soil conservation methods. The crop insurance feature afforded by benefit payments will help farmers to maintain these beneficial systems of farming without interruption in poor crop years. Long-time adjustments can be adapted to natural soil advantages of regions and localities. Already the adjustment administration has under way local studies to help in working out farm programs on a county basis, so as to fit the best permanent use of the varying soil resources of the country up to that county's share of available domestic and foreign markets. Thus, plans are being worked out that should encourage widespread cooperation of farmers in a permanent national soil-maintenance program.<sup>27</sup>

### Soil Conservation and Production Adjustments Are Inter-related

The court's decision accelerated the development of the long-time aspects of national agricultural policy and invalidated a part of existing procedure for accomplishing the immediate objectives. Whereas, under the first emergency program the maintenance of reasonable farm prices and incomes by means of crop control was necessarily the major purpose and soil conservation was incidental, under the present program soil conservation becomes a more important objective and the maintenance of reasonable farm prices becomes no less important. True, the Federal Government can no longer control output by contracts with individual producers in order to maintain prices, but it can grant financial assistance to States for the same purpose. The 1936 act provides for this procedure.

As previously pointed out, results of the regional adjustment project indicate rather clearly that a national program designed solely to conserve the soil would tend to reduce the output of those crops recently affected by unsalable surpluses. Also, experience under the emergency adjustment programs has demonstrated that a national program intended primarily to control output contributes in an important degree toward soil conservation. That one purpose is a function of the other is the basic fact giving rise to some of the misunderstanding concerning the new program.

<sup>27</sup> Issued in mimeograph form at the White House as a statement to the press.

This relation between the two purposes, however, should mislead no one to conclude that measures appropriate for one are equally useful for the other, because they are not. Unless the States, with Federal assistance, are able to develop programs aimed primarily at production control, those who look upon the new Federal program as adequate for this purpose are very likely to be disappointed. Surplus crops are also soil-depleting crops, but there is no assurance that production adjustments sufficient for soil conservation will always be adequate for maintaining reasonable prices.

